

preferably converts the digitized television content 214 into analog signals and provides the analog signals to the video output 224. Those of skill in the art will recognize that the functionality of the CODEC 220 can be optionally disabled depending upon the embodiment of the present invention. For example, the CODEC 220 can receive digital signals from an upstream digital device and/or provide digital output signals to a downstream digital device.

**[0027]** A network interface 226 allows the DVR 110 to send and receive data to and from remote servers via the network connection 116. The type of network interface depends upon the type of network connection utilized by the DVR 110. The network interface 226 might include, for example a modem or an Ethernet card.

**[0028]** The DVR 110 preferably stores channel guide data received from the software server 122 via the network interface 226 in a channel guide database 228. In a preferred embodiment of the DVR 110, the channel guide database 228 is stored in the media storage 212, although alternative embodiments store the database in another location.

**[0029]** The DVR 110 preferably stores criteria for selecting programming from the channel guide database 228 in a criteria database 230. Preferably, the user uses a user interface to specify criteria identifying programs for the DVR 110 to record. For example, the user may specify the criteria by selecting the program from an electronic program guide (EPG), manually specifying that the DVR 110 record from a certain channel at a certain time, specifying that the DVR 110 record any program containing a certain word in its title, or by some combination or variation of these techniques. When the criteria in the criteria database 230 match a program contained in the channel guide

database 228, the processor 210 and program code modules cause the DVR 110 to record the program. In a preferred embodiment of the DVR 110, the criteria database 230 is stored in the media storage 212, although alternative embodiments store the database in another location.

**[0030]** FIG. 3 is an illustration of the media storage 212 of FIG. 2 according to an embodiment of the DVR 110. The media storage 212 has three main areas: content 310, system 312, and error recovery 314. Preferably, these areas are stored in different partitions, so that one area can be formatted or otherwise modified without affecting the other areas. In an alternative embodiment, the three areas are stored in a single partition or in another configuration. In FIG. 3, the media storage 212 is represented as a platter of a hard drive and the three areas are illustrated in different sectors of the platter. Those of ordinary skill in the art will recognize that FIG. 3 illustrates a logical representation of the media storage 212 and is not intended to represent the physical layout of data.

**[0031]** The content area 310 preferably stores the digitized television content 214. In one embodiment, the television content area 310 also stores the channel guide database 228 and criteria database 230. In an alternative embodiment, these two databases 228, 230 are stored in other areas or in dedicated partitions.

**[0032]** The system area 312 preferably stores the program code modules 216 for controlling the operation of the DVR 110. In one embodiment of the DVR 110, the system area 312 also stores program code modules 316 for monitoring the operation of the DVR and detecting whether to start the error recovery process (referred to as

“monitoring modules”). In an alternative embodiment, all or a portion of the monitoring modules 316 are stored in the nonvolatile memory 219.

**[0033]** The error recovery area 314 preferably stores program code modules 318 (referred to as “recovery modules”) and data modules 320 for repairing or otherwise recovering from soft errors in the DVR 110. In one embodiment, the error recovery area 314 is locked, hidden, encrypted, or otherwise protected from alteration. Therefore, there is a high probability that the recovery modules 318 in the error recovery area 314 are intact and uncorrupted, despite any errors suffered by the DVR 110. In another embodiment, at least a portion of the recovery 318 modules are stored in the nonvolatile memory 219 to likewise ensure that an uncorrupted version of the modules are present in the DVR 110.

**[0034]** The data modules 320 in the error recovery area 314 preferably include an executable backup copy of the program code modules 216 for controlling the operation of the DVR 110. This backup copy can be utilized as a direct replacement should an error occur in the program code modules 216 in the system area 312. The data modules 320 preferably can also be used as backup copies of the individual files that comprise the program code modules 216 for controlling the operation of the DVR.

**[0035]** The recovery modules 318 in the error recovery area 314 preferably implement procedures for diagnosing and/or repairing soft errors occurring in the DVR 110. In order to implement the recovery procedures, the recovery modules 318 preferably contain modules for determining whether to activate the network recovery module 221. In one embodiment, the recovery modules 318 also include modules for interacting with